AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A lead assembly comprising:

a lead body extending from a distal end to a proximal end;

a conductor disposed within the lead body;

a piston movably disposed within the lead body and having an outer surface including a recess extending inwardly from the outer surface, wherein the recess has a helical shape;

a fixation helix mechanically supported by and fixedly coupled ~~with~~ to the piston at a first portion of the fixation helix, wherein the first portion of the fixation helix forms a drive mechanism that advances the fixation helix and includes successive turns that are partially recessed within the recess of the piston with a portion of the fixation helix above the outer surface of the piston; and

a housing portion positioned near the distal end of the lead body, the housing portion including a guide disposed on an inner surface thereof in which the first portion of the fixation helix rides along during at least one of advancing or retracting of the fixation helix relative to the lead body.

2. (Canceled)

3. (Previously Presented) The lead assembly as recited in claim 1, wherein the piston has the recess wrapped around the outer surface thereof such that one or more portions of the recess are separated from one another by a non-recessed portion, and at least a portion of the first portion of the fixation helix is disposed within the recess.

4. (Canceled).

5. (Previously Presented) The lead assembly as recited in claim 1, wherein the recess has a first width and the first width is less than a wire diameter of the first portion of the fixation helix.

6. (Previously Presented) The lead assembly as recited in claim 3, wherein approximately 1/3 to 1/2 of a wire diameter of the fixation helix is disposed within the recess.

7. (Canceled)

8. (Currently amended) A lead assembly comprising:

a lead body extending from a distal end to a proximal end;

a housing positioned near the distal end of the lead body, the housing including a guide disposed on an inner surface thereof;

a conductor disposed within the lead body;

a piston movably disposed within the housing and having an outer surface including a recess extending inwardly from the outer surface, wherein the recess has a helical shape; and

a fixation helix fixedly coupled ~~with~~ to, and protruding radially around, the piston along a first longitudinal portion of the fixation helix, wherein the first portion of the fixation helix is coupled with and mechanically supported by the piston along the recess within the piston and successive turns of the fixation helix are partially recessed within the recess of the piston with a portion of the fixation helix above the outer surface of the piston;

wherein the fixation helix forms a drive mechanism that rides along the guide allowing at least one of advancing or retracting of the fixation helix relative to the lead body.

9. (Previously Presented) The lead assembly as recited in claim 8, wherein the guide is a helical guide protruding from the inner surface of the housing.

10. (Previously Presented) The lead assembly as recited in claim 9, wherein the helical guide is a segmented helical guide.

11. (Previously Presented) The lead assembly as recited in claim 8, wherein the fixation helix is coupled with the piston along the recess a first portion of the recess separated from a second portion of the recess by a non-recessed piston portion.

12. (Canceled)

13. (Canceled)

14. (Original) The lead assembly as recited in claim 8, wherein the fixation helix is electrically coupled with the conductor.

15. (Currently amended) A lead assembly comprising:

a conductor;

a piston electrically coupled with the conductor and having an outer surface including a recess extending inwardly from the outer surface, wherein the recess has a helical shape;

an active fixation helix mechanically supported by and fixedly coupled ~~with~~ to the piston at a first portion of the fixation helix, wherein the first portion of the fixation helix forms a drive mechanism that longitudinally advances and retracts the fixation helix, the fixation helix being positioned on the outer surface of the piston, wherein successive turns of the fixation helix are partially recessed within the recess of the piston with a portion of the fixation helix above the outer surface of the piston; and

a housing including a guide therein, the guide extending from an inner surface of the housing and adapted to interact directly with the first portion of the fixation helix.

16. (Original) The lead assembly as recited in claim 15, wherein the active fixation helix is electrically coupled with the piston.

17. (Previously Presented) The lead assembly as recited in claim 15, wherein the active fixation helix is recessed within an outer axial surface portion of the piston.

18. (Previously Presented) The lead assembly as recited in claim 15, wherein the recess comprises a groove that comprises more than one portion, the portions being separated by non-recessed groove portions, wherein the active fixation helix is mechanically coupled with the piston via one or more of the groove portions.

19. (Currently amended) A method comprising:

providing a lead assembly including:

a lead body extending from a distal end to a proximal end;

a conductor disposed within the lead body;

a piston movably disposed within the lead body and having an outer surface including a recess extending inwardly from the outer surface, wherein the recess has a helical shape;

a fixation helix mechanically supported by, fixedly coupled ~~with~~ to, and protruding radially around, the piston at a first portion of the fixation helix, wherein the first portion of the fixation helix forms a drive mechanism and is positioned on the outer surface of the piston, and wherein successive turns of the fixation helix are partially recessed within the recess of the piston with a portion of the fixation helix above the outer surface of the piston;

a housing including a guide extending from an inner surface thereof;

rotating the fixation helix; and

longitudinally driving the fixation helix with the drive mechanism, including moving the first portion of the fixation helix directly along the guide.

20. (Previously Presented) The method as recited in claim 19, further comprising recessing at least a part of the first portion of the fixation helix within the piston such that a non-recessed portion of the piston separates successive turns of the fixation helix.

21. (Previously Presented) The method as recited in claim 19, further comprising recessing approximately 1/3 to 1/2 of a wire diameter of the fixation helix within the piston such that successive turns of the fixation helix are separated by a non-recessed piston portion.

22. (Canceled)

23. (Canceled)

24. (Previously Presented) The lead assembly as recited in claim 1, wherein the housing portion comprises a molded component.

25. (Previously Presented) The lead assembly as recited in claim 8, further comprising a stop adapted to prevent over extension of the fixation helix from the lead body, the stop protruding around a portion of the piston.

26. (Previously Presented) The lead assembly as recited in claim 15, further comprising a fluoromarker coupled with a portion of the housing.